

FIG.1

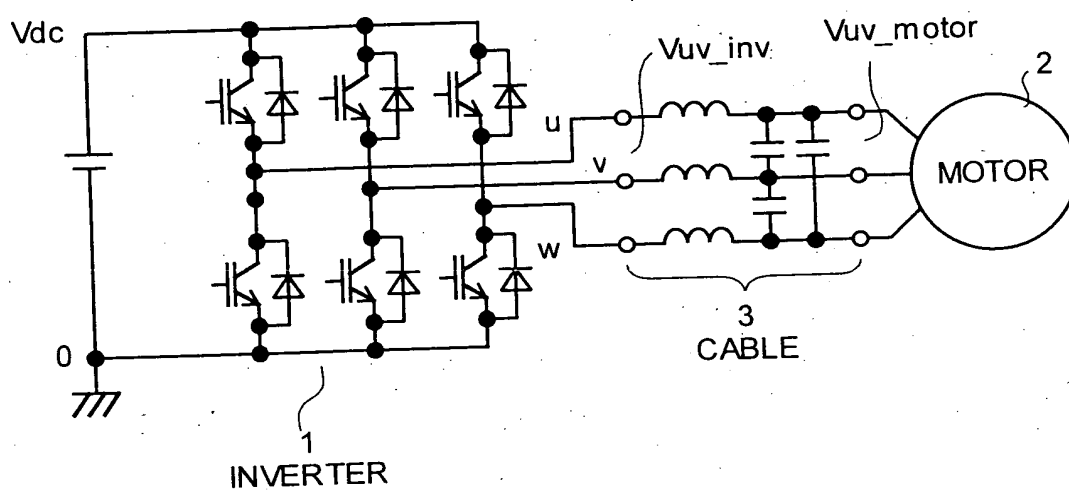
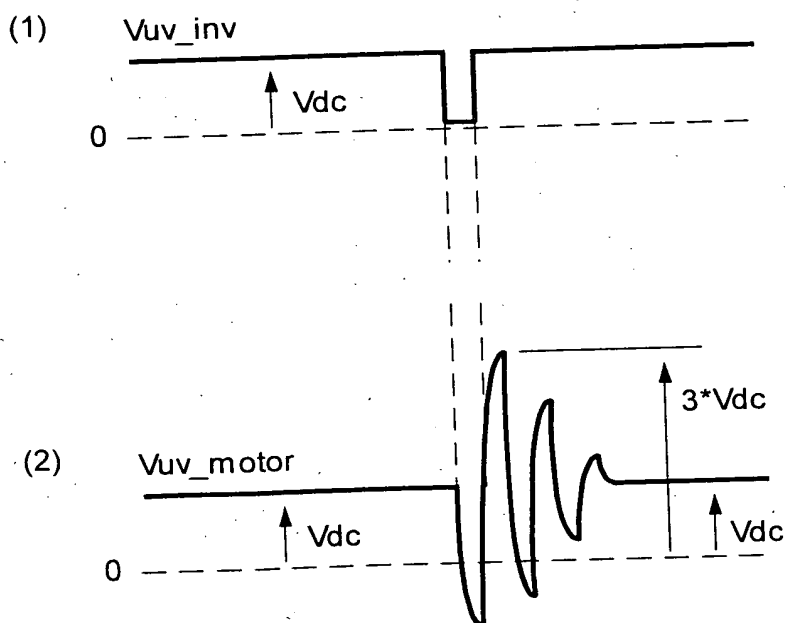


FIG.2



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FIG.3

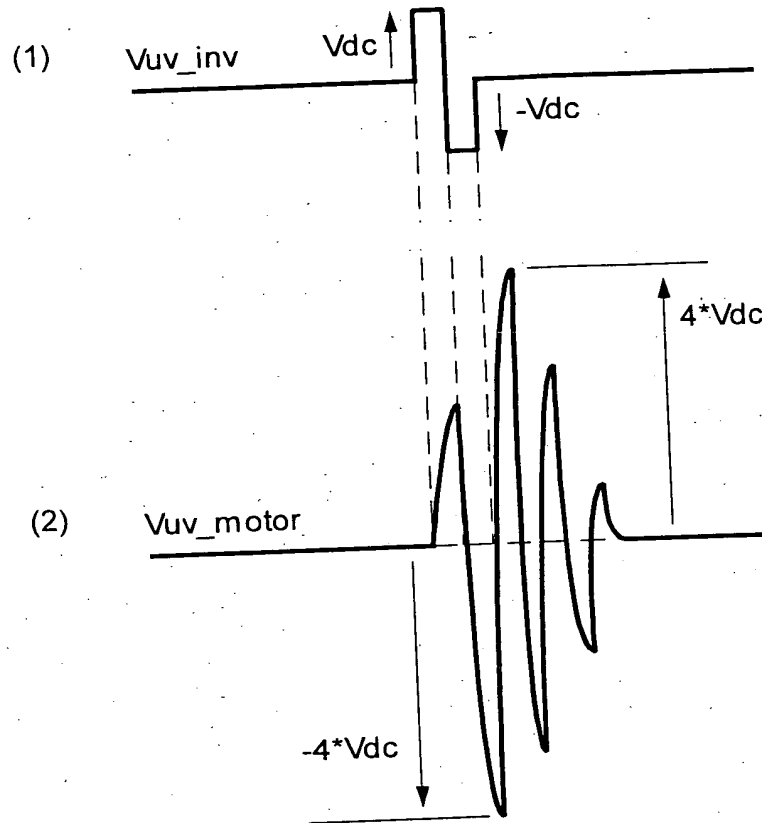


FIG.4

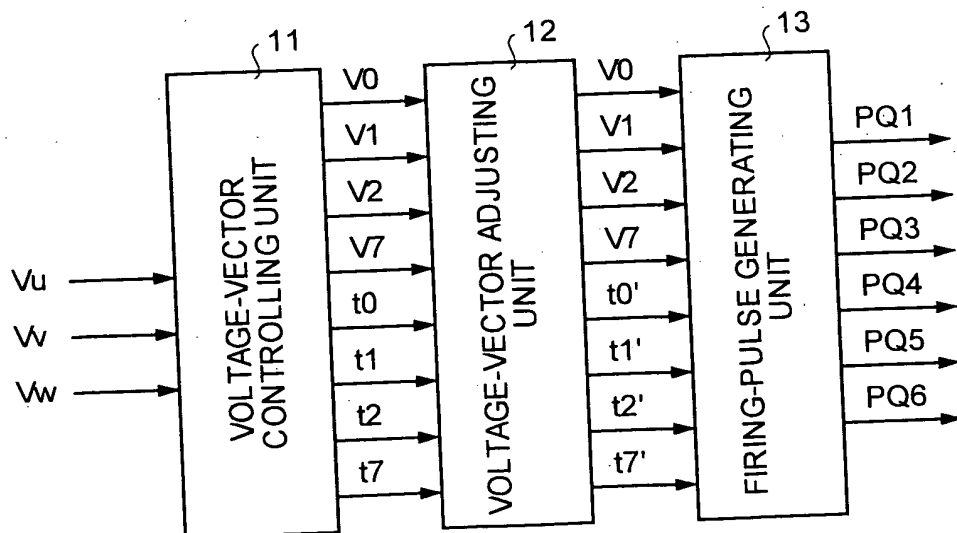


FIG.5

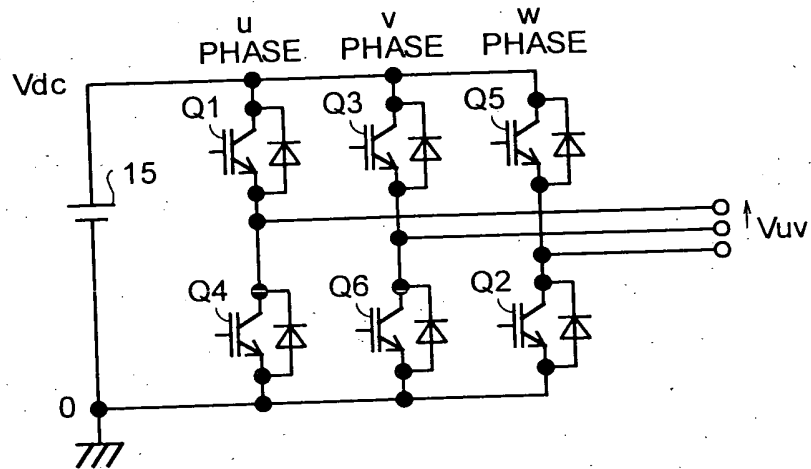


FIG.6

STATE	TURNED-ON IGBT			VOLTAGE VECTOR
	u PHASE	v PHASE	w PHASE	
0	Q4	Q6	Q2	V0
1	Q1	Q6	Q2	V1
2	Q1	Q3	Q2	V2
3	Q4	Q3	Q2	V3
4	Q4	Q3	Q5	V4
5	Q4	Q6	Q5	V5
6	Q1	Q6	Q5	V6
7	Q1	Q3	Q5	V7

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FIG.7

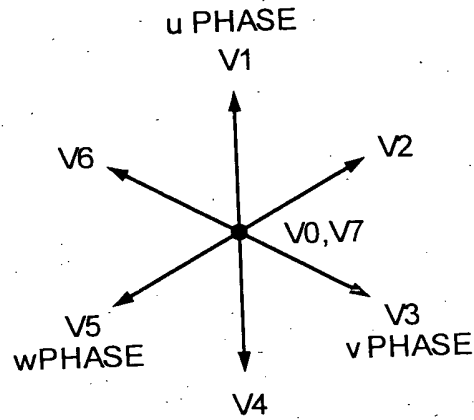
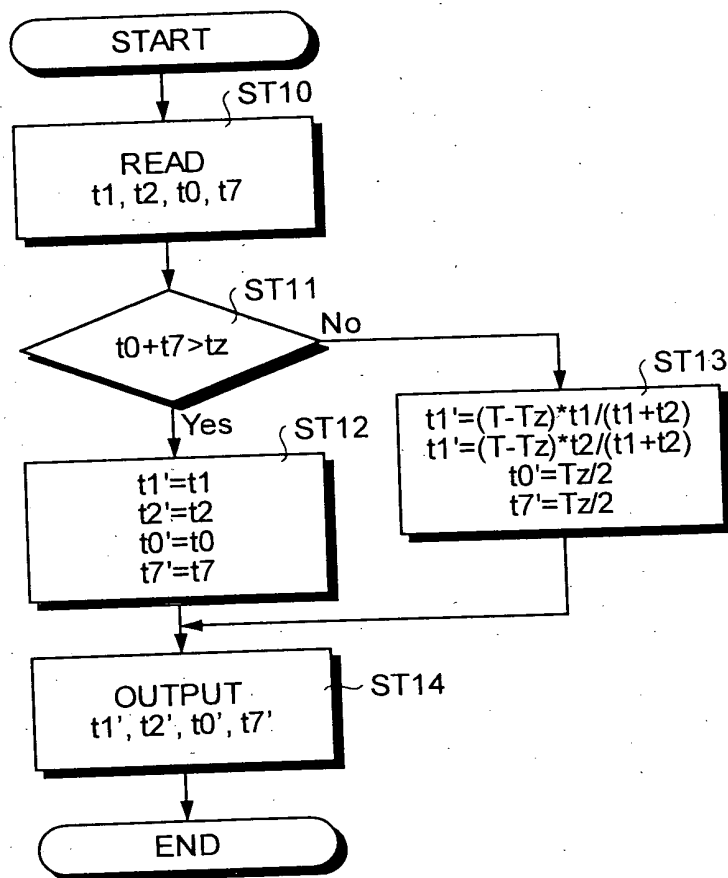


FIG.8

PHASE θ	VOLTAGE VECTOR
$0 \leq \theta < \pi/3$	V1, V2, V0, V7
$\pi/3 \leq \theta < 2\pi/3$	V2, V3, V0, V7
$2\pi/3 \leq \theta < \pi$	V3, V4, V0, V7
$\pi \leq \theta < 4\pi/3$	V4, V5, V0, V7
$4\pi/3 \leq \theta < 5\pi/3$	V5, V6, V0, V7
$5\pi/3 \leq \theta < 2\pi$	V6, V1, V0, V7

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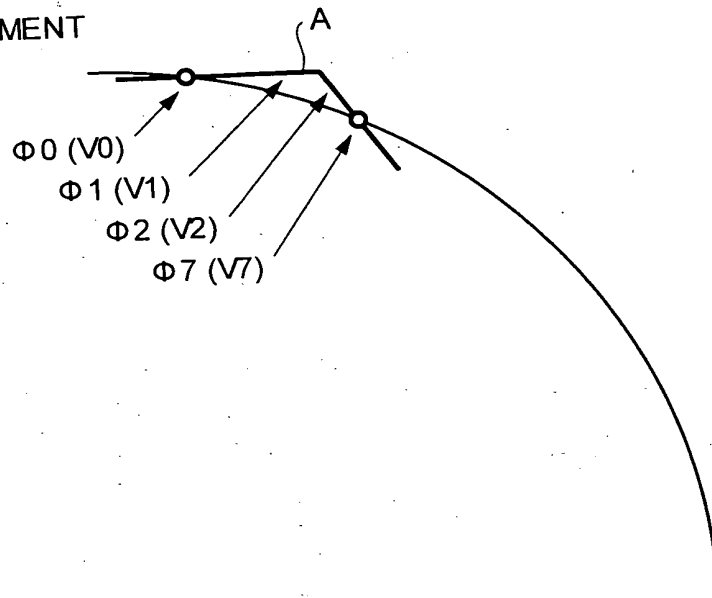
FIG.9



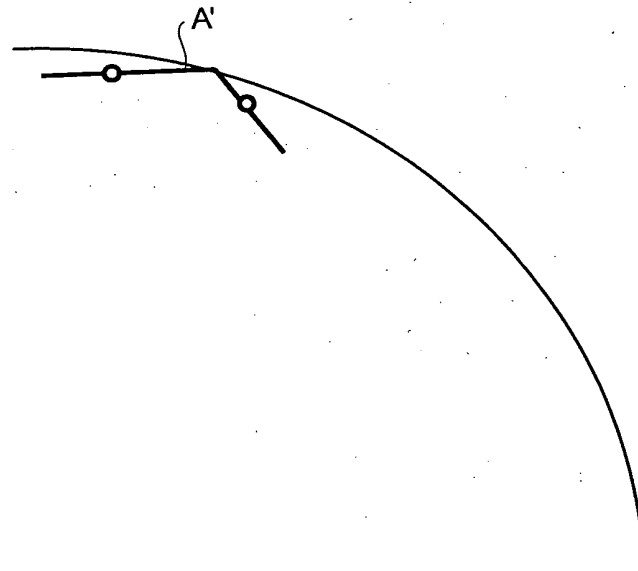
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FIG. 10

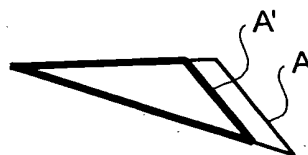
(1) BEFORE ADJUSTMENT



(2) AFTER ADJUSTMENT



(3) COMPARE



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FIG.11

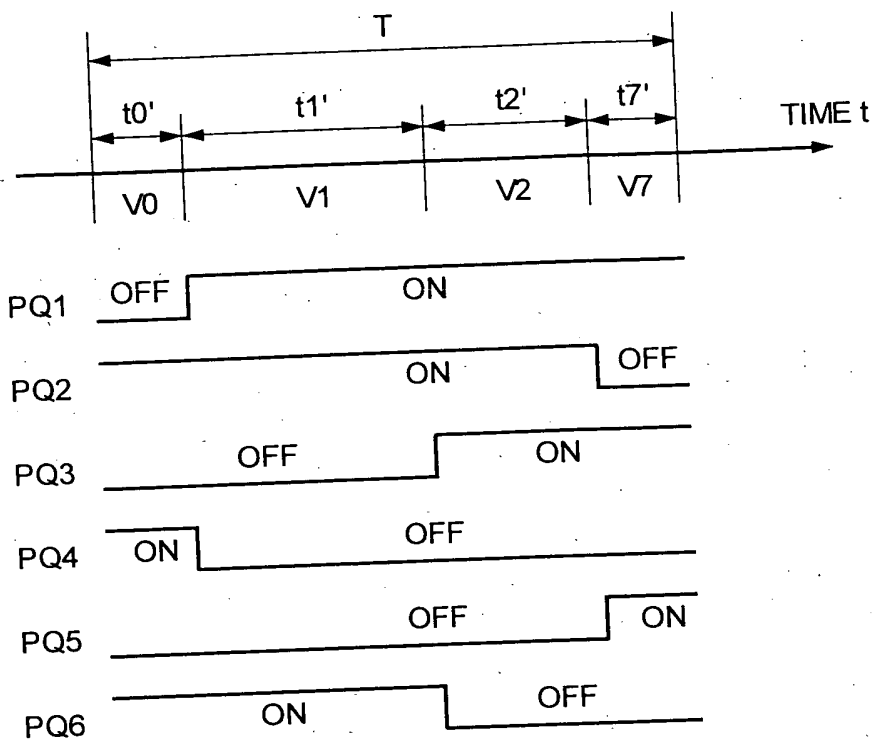
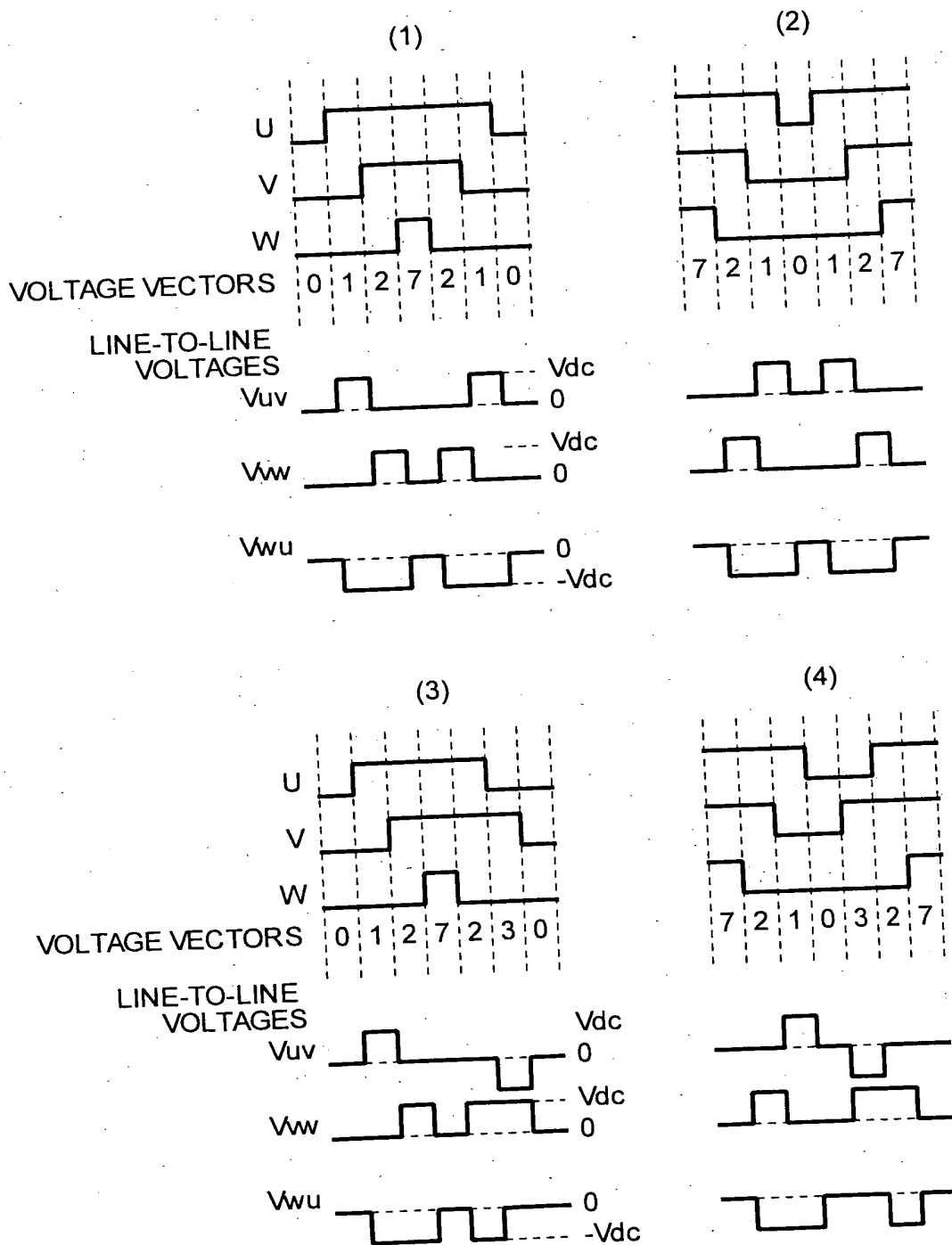

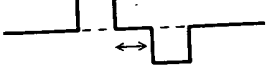

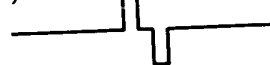
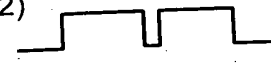

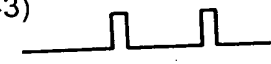
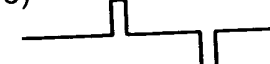
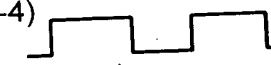



FIG. 12



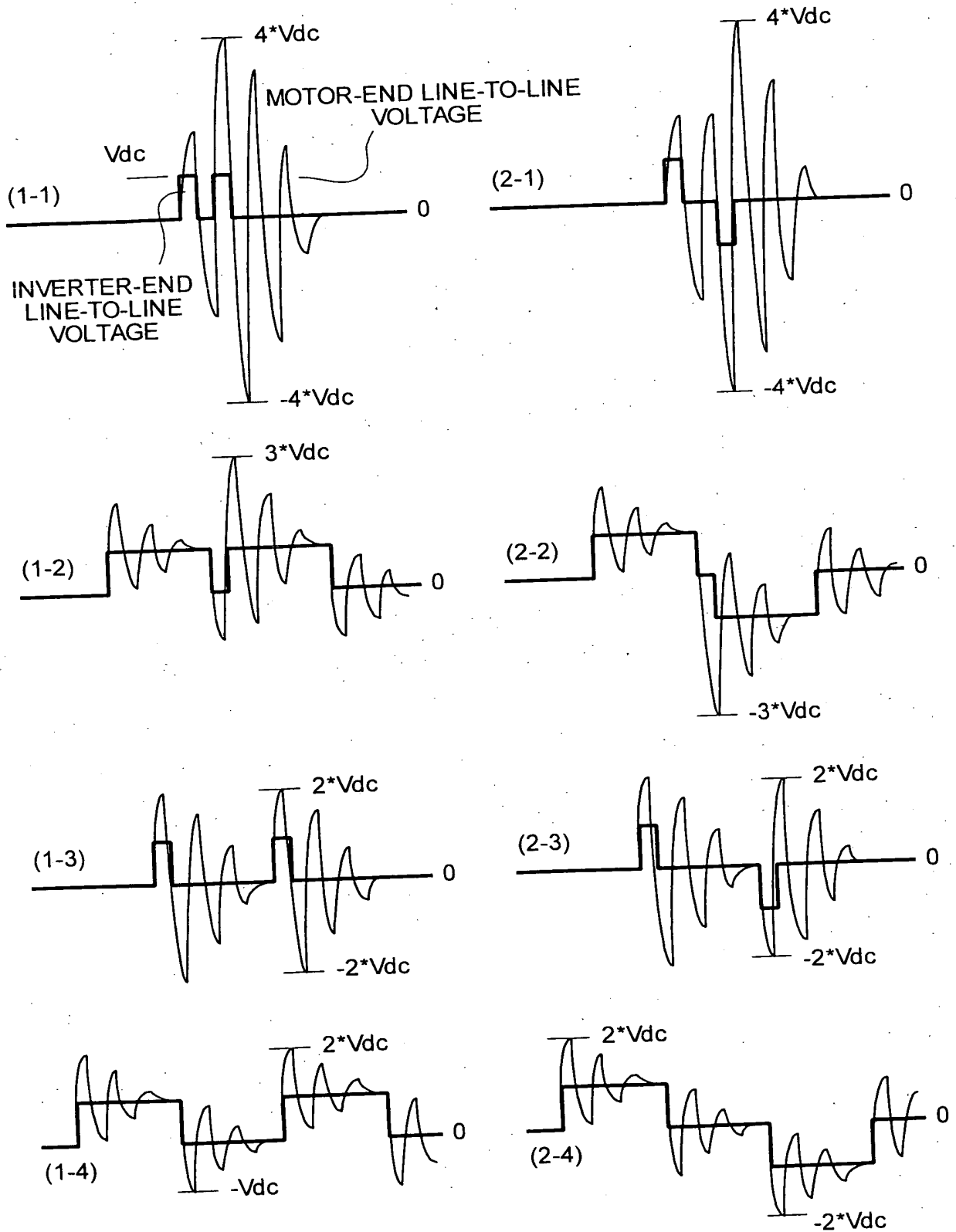
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FIG.13

OUTPUT TIME OF ZERO- VOLTAGE VECTORS	OUTPUT TIME OF VOLTAGE VECTORS OTHER THAN ZERO- VOLTAGE VECTORS	LINE-TO-LINE VOLTAGE PATTERN 1  ZERO-VOLTAGE VECTOR	LINE-TO-LINE VOLTAGE PATTERN 2  ZERO-VOLTAGE VECTOR
SHORT	SHORT	(1-1) 	(2-1) 
SHORT	LONG	(1-2) 	(2-2) 
LONG	SHORT	(1-3) 	(2-3) 
LONG	LONG	(1-4) 	(2-4) 

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FIG. 14



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FIG.15

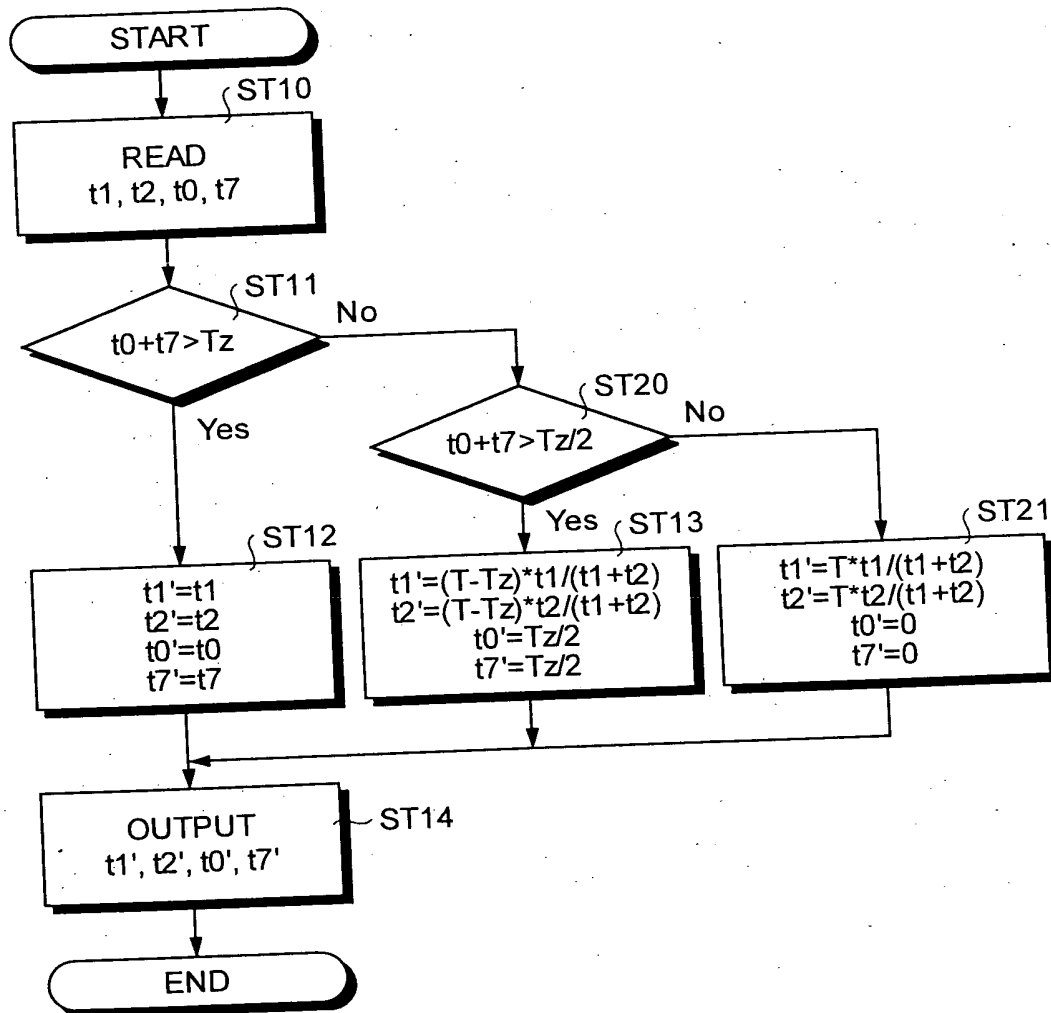


FIG.16

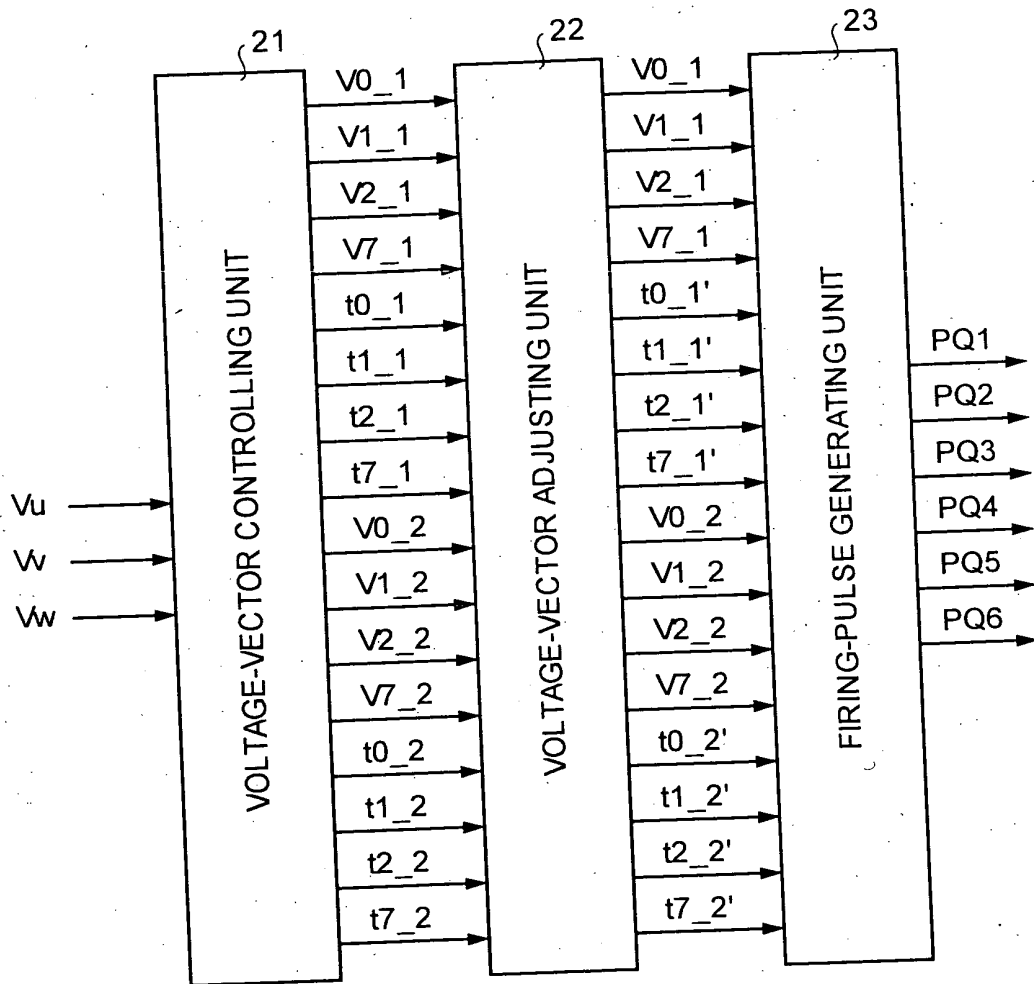
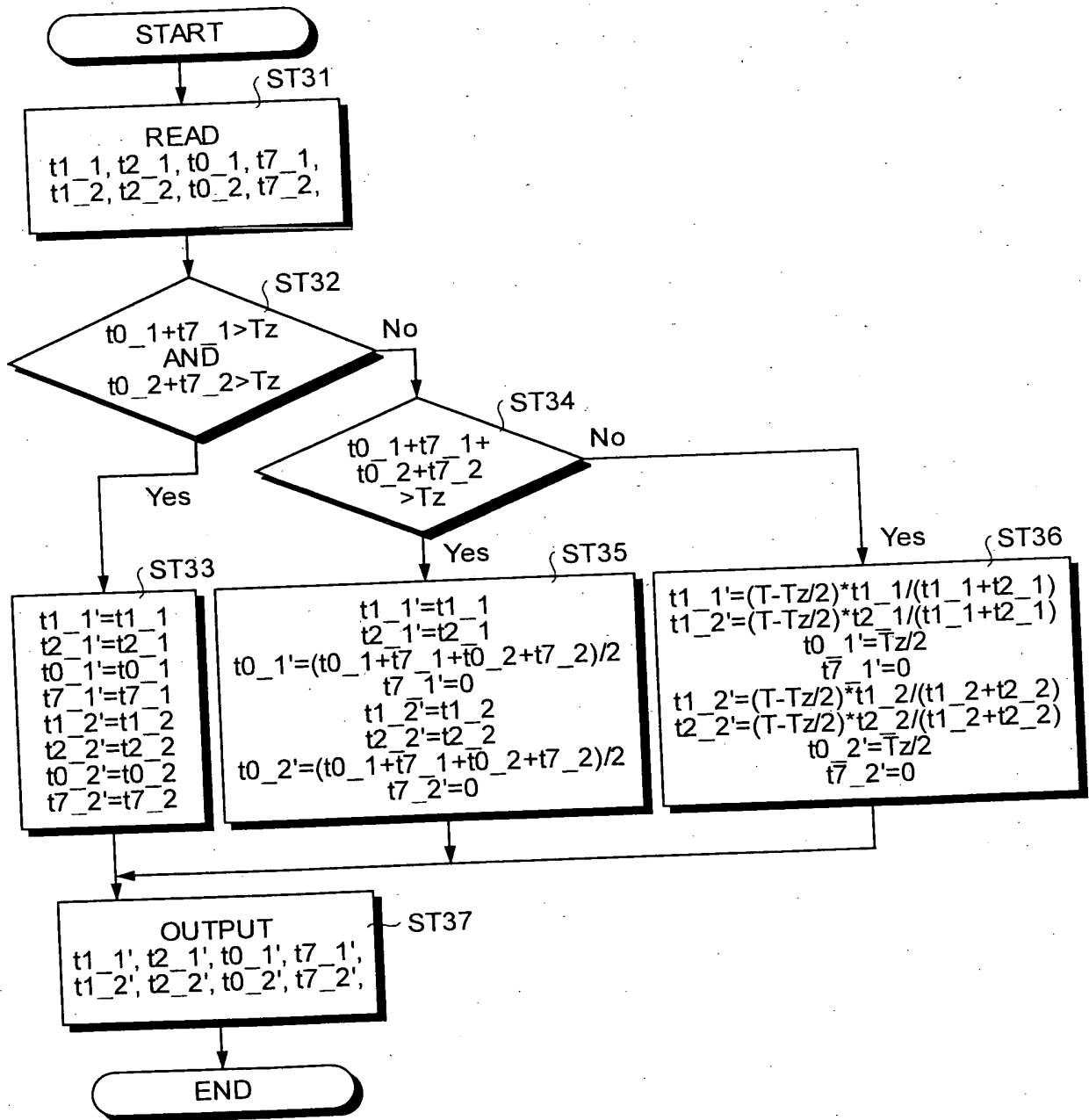
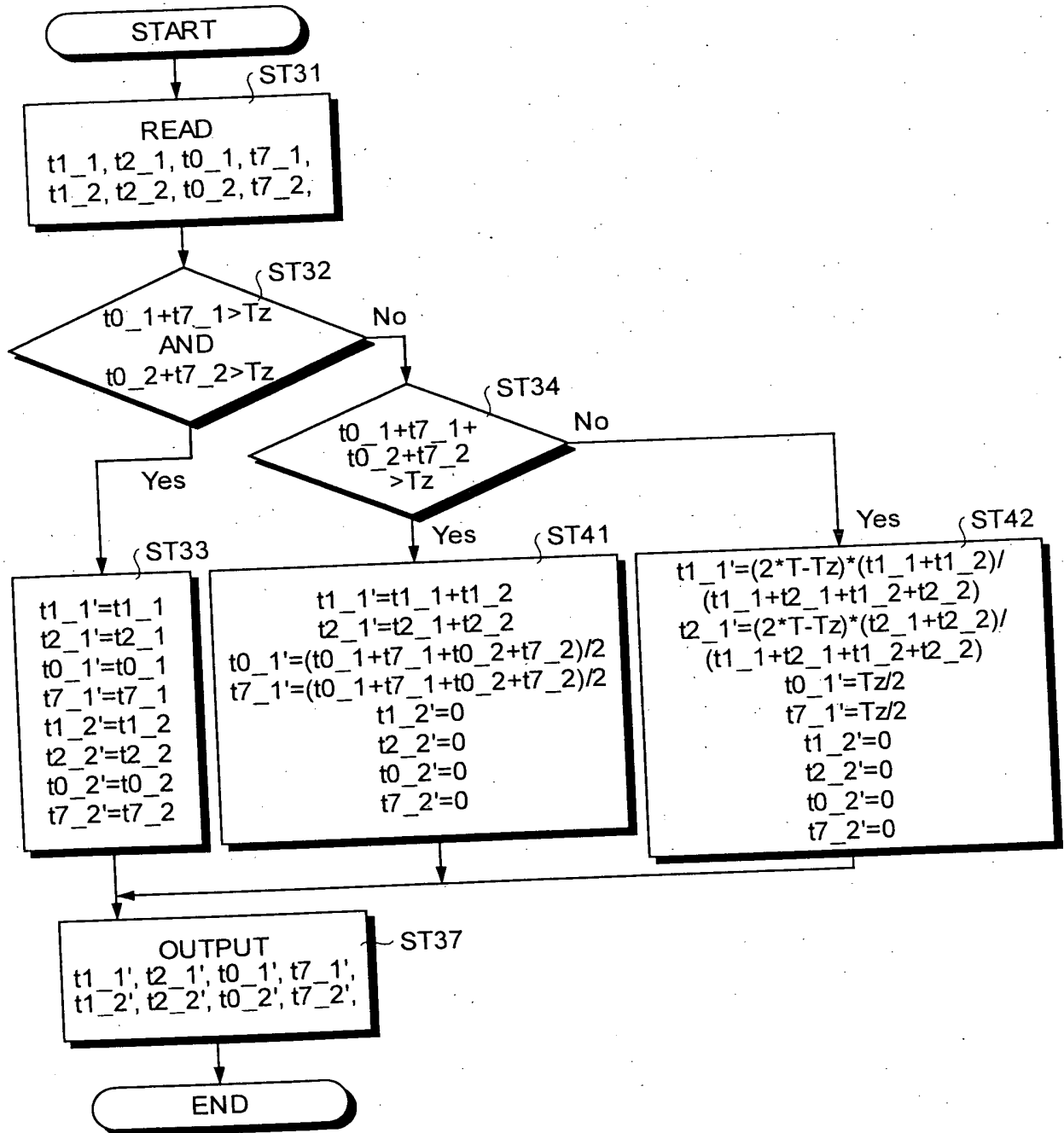


FIG.17



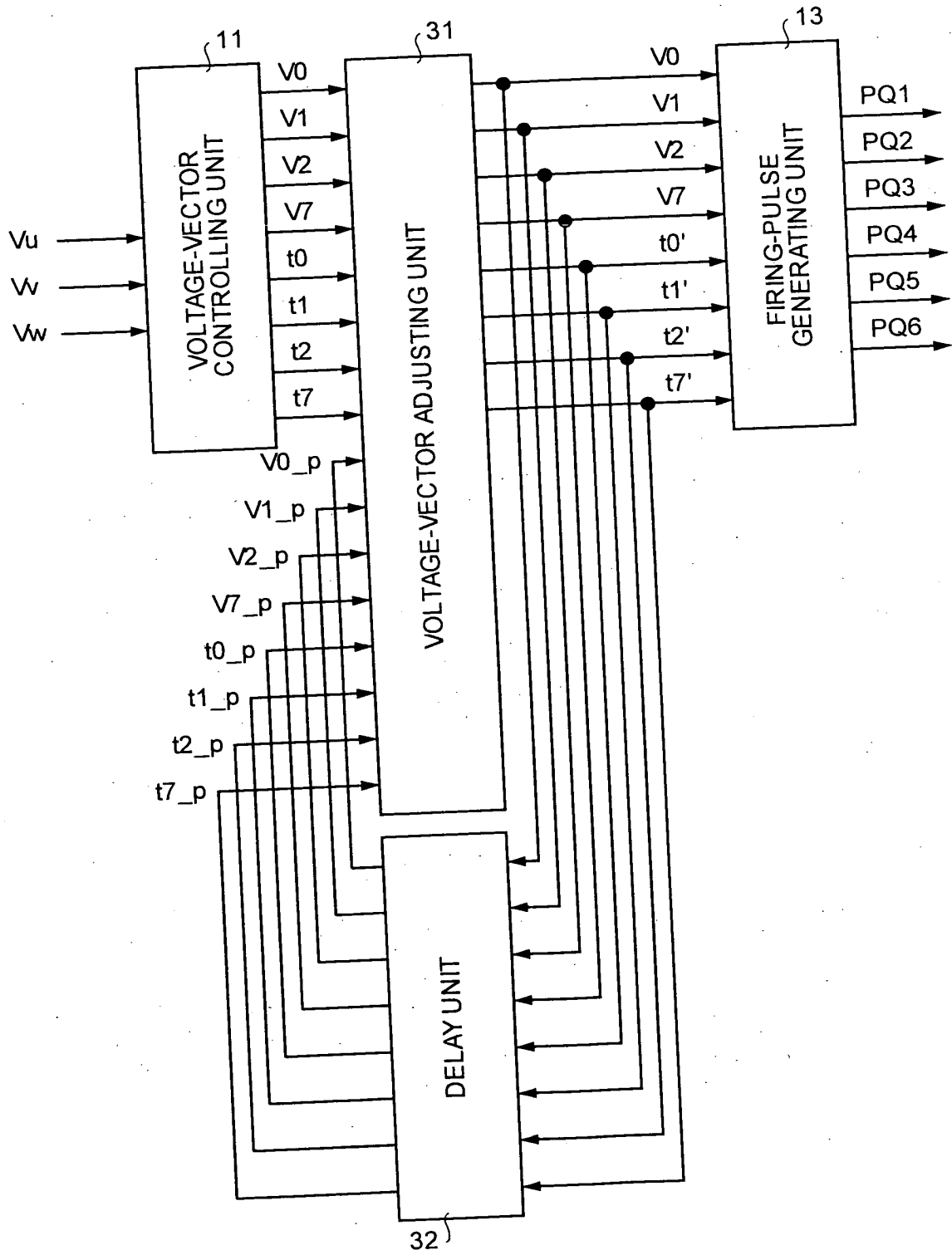
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FIG.18



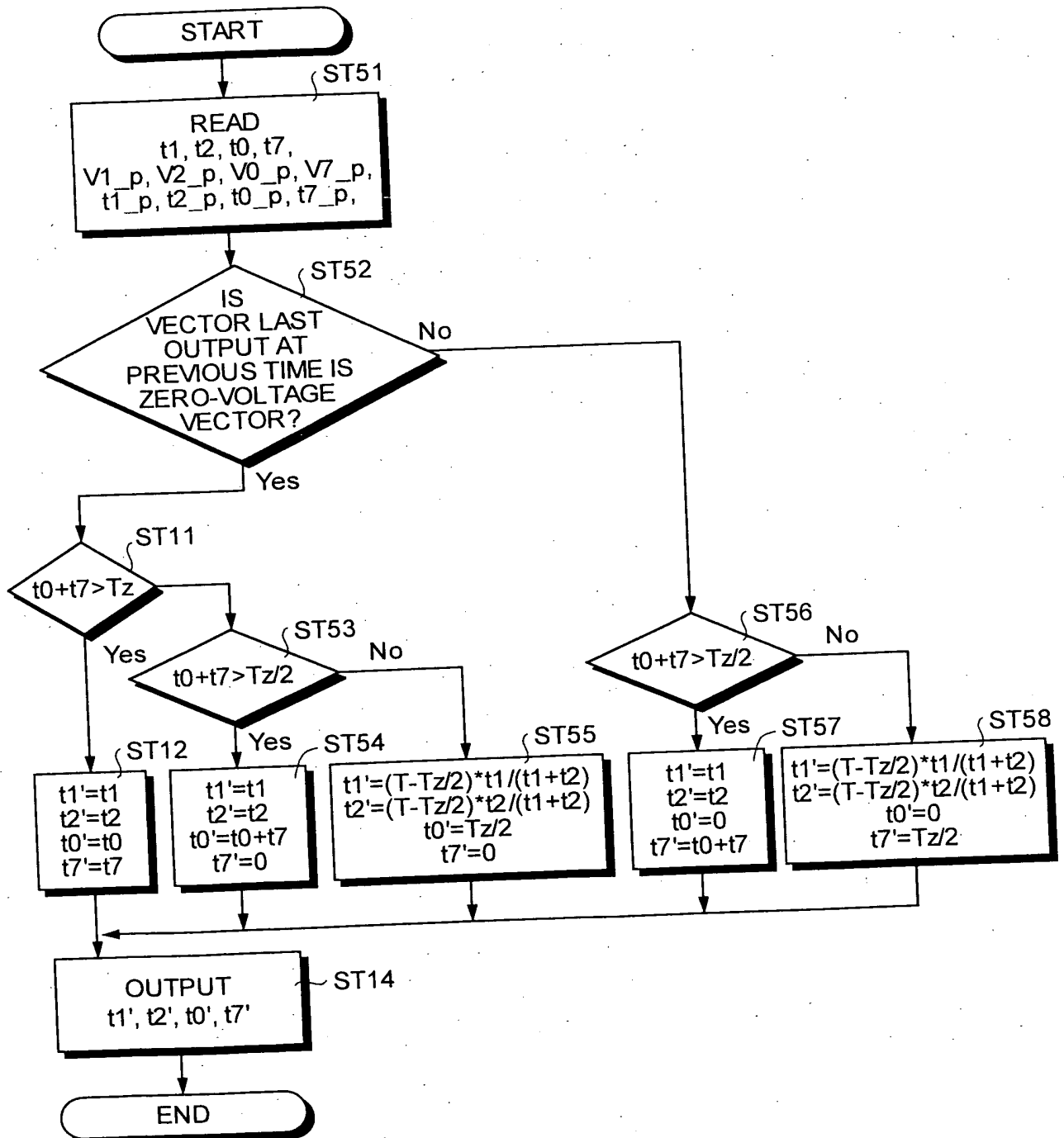
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FIG. 19



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FIG.20



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FIG.21

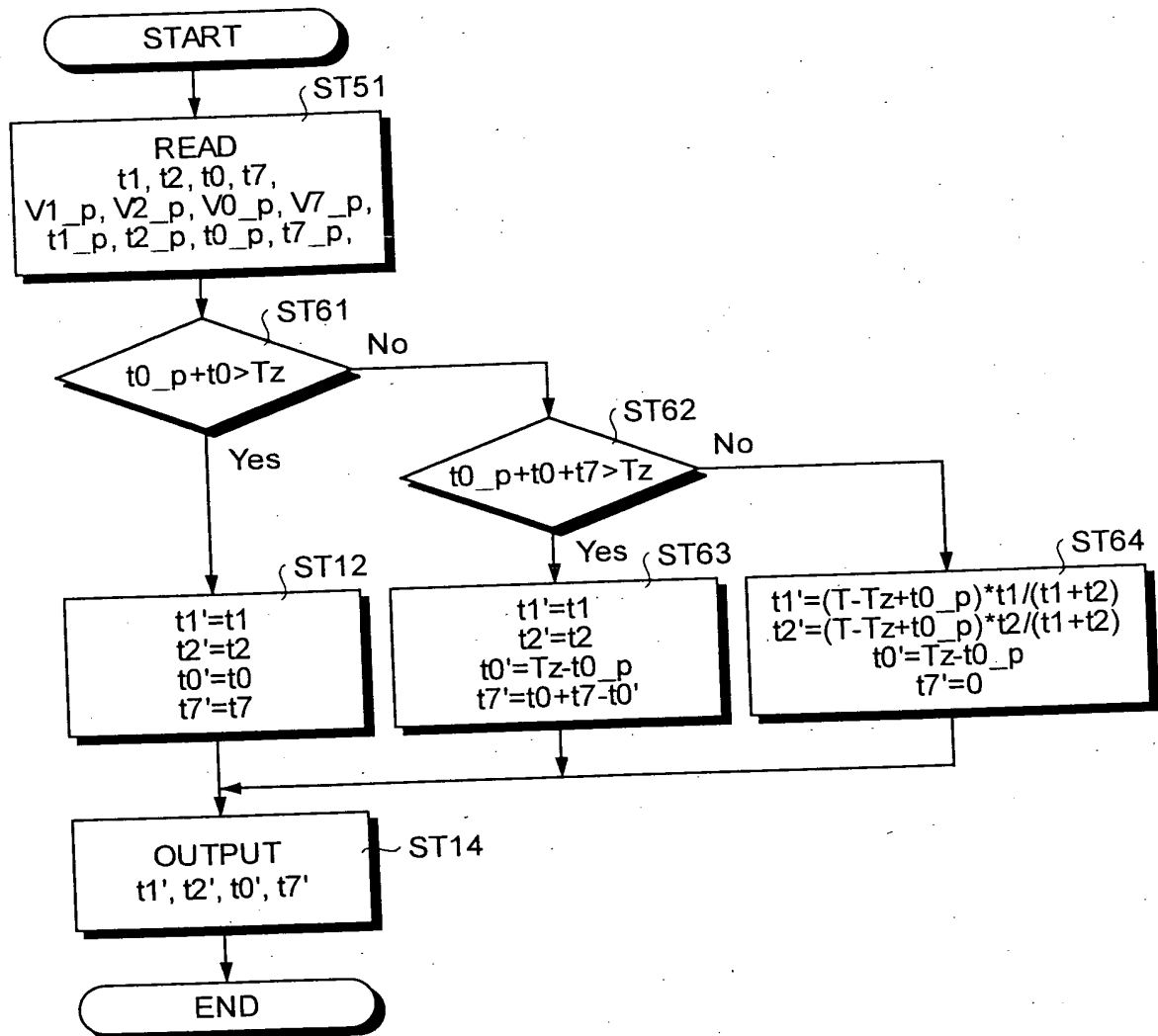


FIG.22

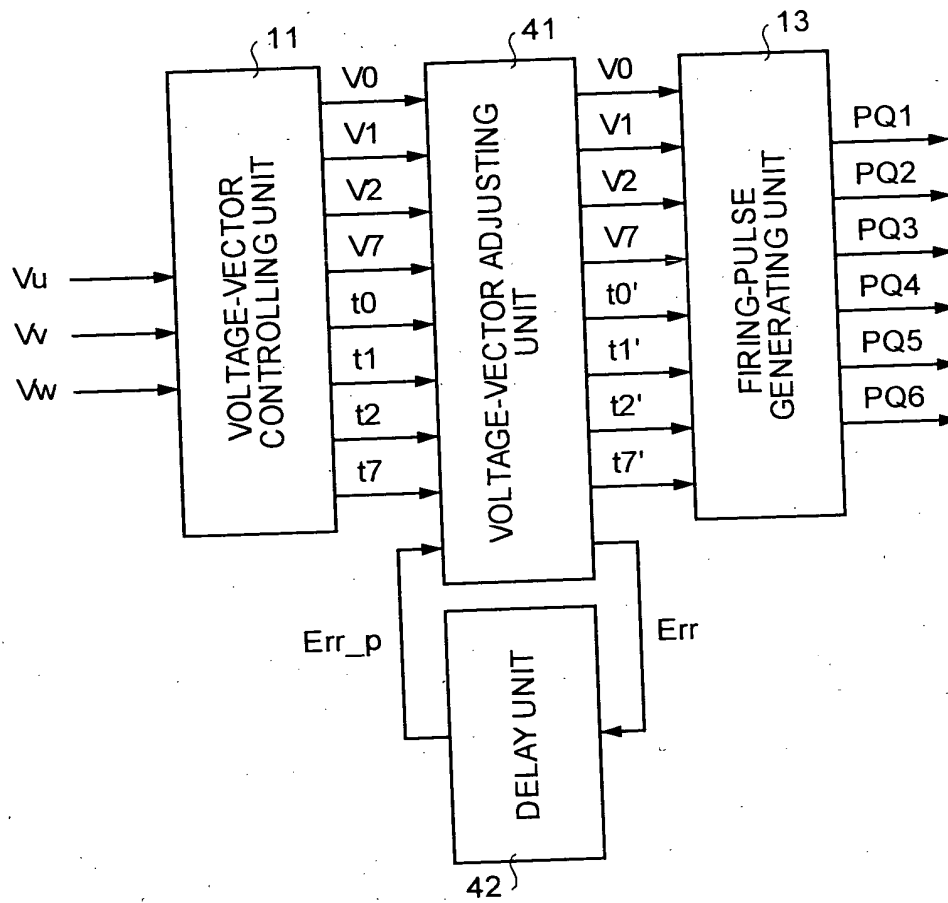
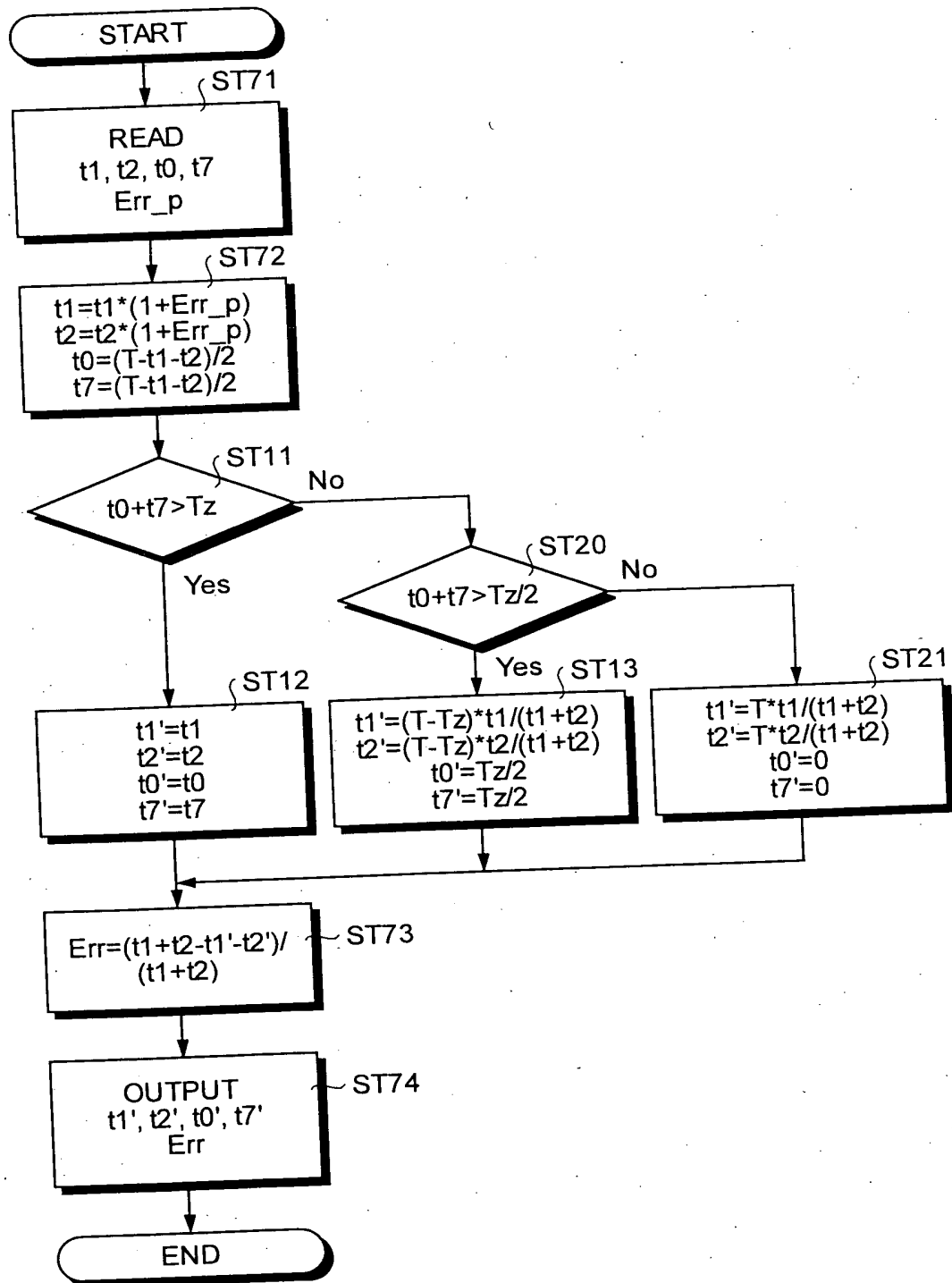


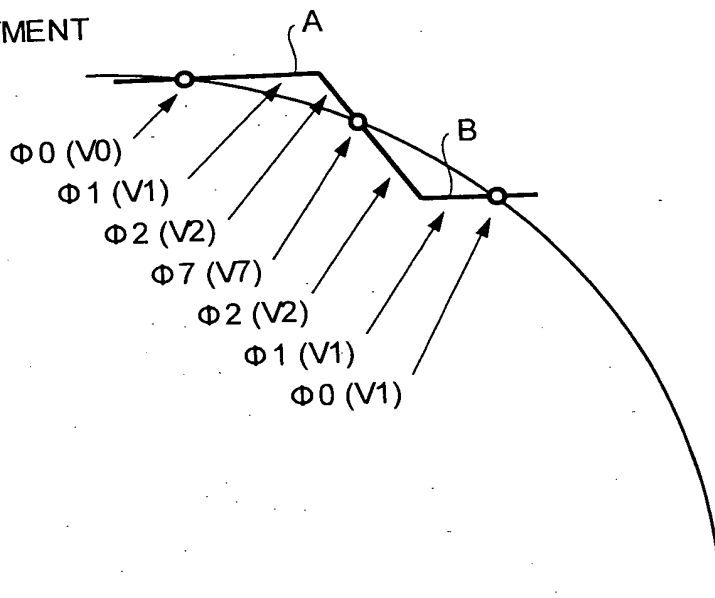
FIG.23



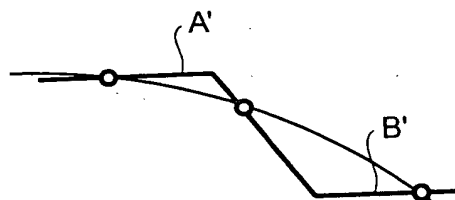
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FIG.24

(1) BEFORE ADJUSTMENT



(2) AFTER ADJUSTMENT



(3) COMPARE

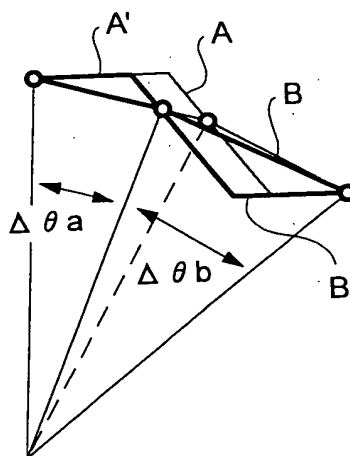
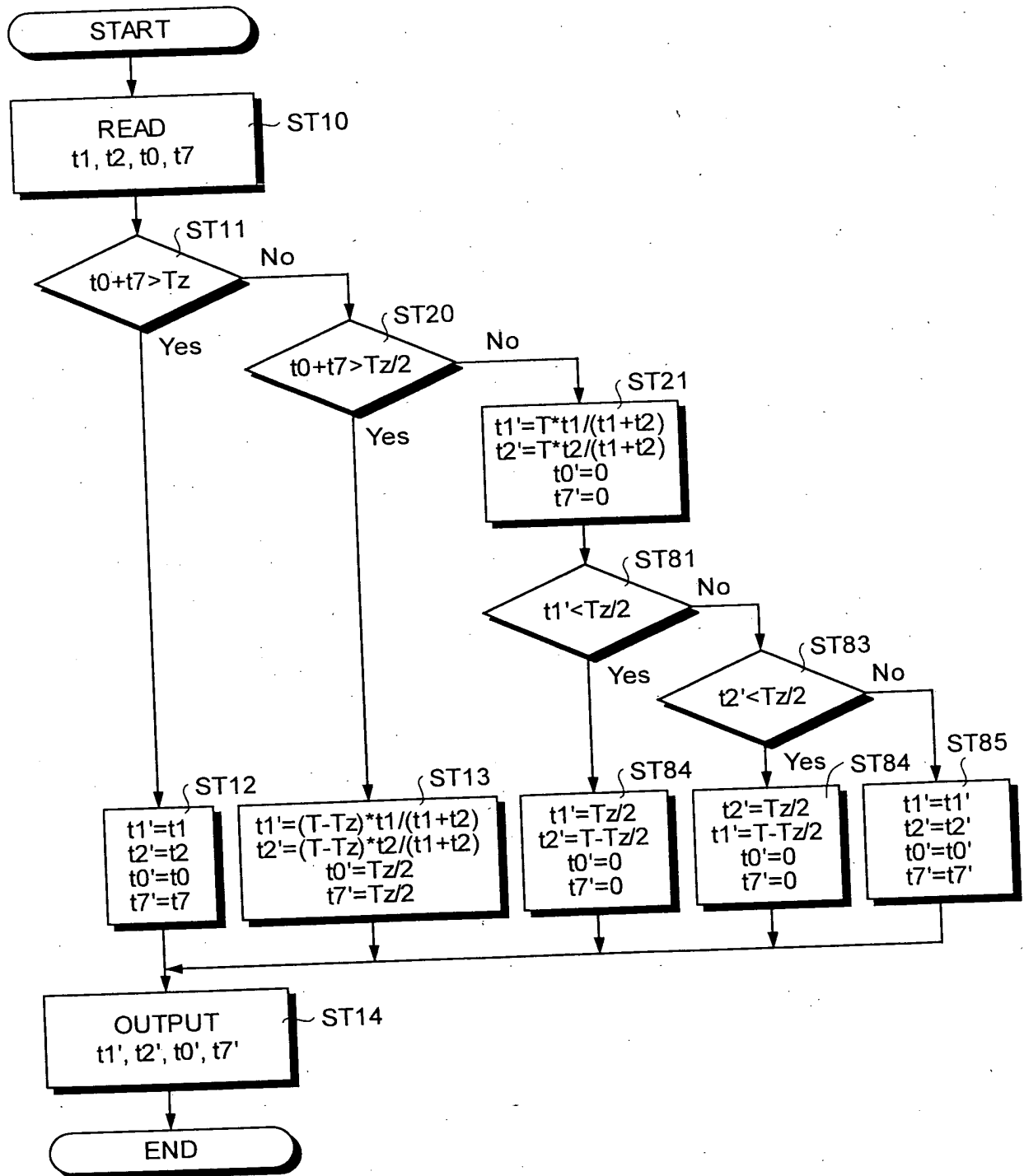


FIG.25



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FIG.26

